

# Clinical and Translational Serology Highlights

# SERONEWS

October 2021

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## Meet the Clinical and Translational Serology Task Force

The Clinical and Translational Serology Task Force (CTTF) is one of the U.S. National Cancer Institute's initiatives to respond to the SARS-CoV-2 pandemic.

This is the first installment of its quarterly newsletter. The running publication will include updates about ongoing efforts, information about research, opportunities for communication and collaboration, and notifications about past and upcoming events.

The CTTF was established in January 2021. Its mission is to catalyze translation of research findings into public health changes by

bringing together and engaging various government organizations, academic groups, and industry partners to provide relevant tools and information related to serology testing to help decision-makers manage the current and future status of the SARS-CoV-2 pandemic.

Deploying standardized serology testing for the community is among the CTTF's major aims, as is fully leveraging the power of serology to inform public health changes. The task force strives to facilitate national and international collaborations that use rigor and

consistency to meet these goals, expand the community's understanding of SARS-CoV-2 serology, and illuminate a path forward for the pandemic response.

The CTTF pursues its mission by identifying, coordinating, and uniting. It recognizes existing efforts and gaps in research and communication. It determines appropriate assays for clinical and translational studies and prioritizes unmet needs. Task force members liaise and establish collaborations between clinical and public health groups, including the National Cancer Institute's Serological

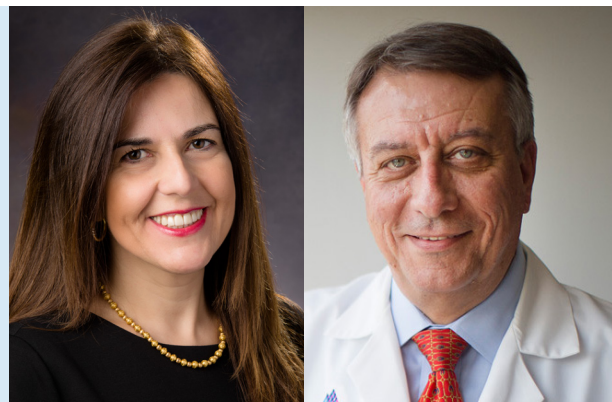
### Meet the Clinical and Translational Serology Task Force (cont.)

Sciences Network and the World Health Organization. They also support public outreach and education about serology.

The approach connects policymakers and stakeholders; clinical, epidemiological, and translational serology teams; and vaccine networks to address SARS-CoV-2 serology. Each group contributes its unique strengths and expertise to a shared vision.

#### Dynamic Duo

The CTTF is co-chaired by Ligia Pinto, Ph.D., at the Frederick National Laboratory, and Carlos Cordon-Cardo, M.D., Ph.D., at the Icahn School of Medicine at Mount Sinai. Parties with questions about the CTTF can contact Jayne Christen, Ph.D., PMP, at [jayne.christen@nih.gov](mailto:jayne.christen@nih.gov).



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### Study to Harmonize Serological Assay Data Is Underway



The National Cancer Institute–Frederick National Laboratory Clinical and Translational Serology Operations Team is coordinating the Collaborative Assay Harmonization Study. The effort seeks to improve scientists' ability to compare data between SARS-CoV-2 studies and vaccines.

Participating investigators are comparing the performance of approximately 30 SARS-CoV-2 serology assays by using a common set of samples from vaccinated people and people with a history of SARS-CoV-2 infection. Each assay has previously

been optimized and validated at laboratories involved in clinical studies assessing individuals' serological levels of SARS-CoV-2 antibodies after infection and vaccination.

Nineteen institutions have confirmed their participation. A kickoff meeting was held virtually on August 18, and the samples were shipped to the laboratories during the week of August 23.

The many SARS-CoV-2 serology assays available to the field use different reagents and procedures. The lack of standardization represents a hindrance to a coordinated

pandemic response. These assays' results can't be currently compared or cross-referenced, restricting their potential usefulness.

Data from the Comparative Assay Harmonization Study represent movement toward a solution to that problem. The investigation is ongoing. Results will be presented once the study is completed and data are analyzed.



# Serological Standard Distributed to Over 80 Groups



Since its deployment in December 2020, the U.S. SARS-CoV-2 Serology Standard has been adopted by laboratories near and far.

As of September 15, 2021, there had been 84 requests for the standard from the pharmaceutical industry, U.S. government researchers, the National Cancer Institute's Serological Sciences Network (SeroNet), academic institutions, and other groups—both in the U.S. and internationally. The accompanying evaluation panel has been shared with more than 19 organizations.

The standard is calibrated against the World Health Organization International Standard. It is available free of charge to any laboratory studying SARS-CoV-2 serology.

"If you are doing serology assays, we would be happy to provide you with the standard and with one-on-one guidance on how to use it," said Ligia Pinto, Ph.D., the director of the Vaccine, Immunity, and Cancer Directorate at the Frederick National Laboratory, who co-chairs the Clinical and Translational Serology Task Force and coordinates SeroNet.

Groups that aren't members of SeroNet can request the standard via the [Serology Standard page](#) on the Frederick National Laboratory website. SeroNet members can access it via the designated [Microsoft Teams](#) site.

## Assay Evaluation Program Passes 100-Test Milestone



Nearly 18 months into its existence, the SARS-CoV-2 serology assay evaluation program is still going strong.

The program's goal is to identify accurate assays while recognizing those with unacceptable performance. Frederick National Laboratory's Serology Laboratory has tested more than 100 assays since the program began in April 2020.

The evaluations occur independently of the assay manufacturers' studies, and the resulting data are sent to the Food and Drug Administration, which, along with other information, helps FDA determine whether to grant an assay Emergency Use Authorization (EUA).

"Since the program began, we have seen some inconsistent performance between the clinical validation performed by the

sponsor and the independent evaluation performed at [the Frederick National Laboratory] for various serology tests evaluated to date, particularly lateral flow [IgG and IgM] tests. We have also received reports of underperforming serology tests in clinical use," writes the FDA on its website.

Of the more than 100 assays tested so far, more than 30 have received or maintained

### Assay Evaluation Program Passes 100-Test Milestone (cont.)

EUA status. The remainder didn't seek or receive authorization, and some had their EUAs rescinded in light of the evaluation data.

The Vaccine, Immunity, and Cancer Directorate at the Frederick National Laboratory; the Hemostasis Laboratory Branch in the Division of Blood Disorders at the Centers for Disease Control and Prevention; and the Department of Laboratory Medicine at the National Institutes of Health Clinical Center

are cooperating with the FDA to evaluate the assays.

Each assay is tested against a vetted panel of seropositive and seronegative samples developed at the Frederick National Laboratory to assess both sensitivity and specificity. The seropositive samples were collected from people confirmed to have had COVID-19. Seronegative samples date from before the emergence of SARS-CoV-2

in 2019. Results from the tests are publicly available from [the FDA](#) and [the CDC](#).

Parties that wish to have their assay evaluated through the program can do so by emailing [CDRH-OIR-POPS@fda.hhs.gov](mailto:CDRH-OIR-POPS@fda.hhs.gov). A full list of the information for inclusion in the email is available in the [FAQ on the FDA website](#).

### Third Dose of Vaccine Authorized for Immunocompromised and Seniors; Studies Continue



The Food and Drug Administration granted an Emergency Use Authorization in August for immunocompromised individuals and in September for people aged 65 years and older to receive a third dose of an mRNA SARS-CoV-2 vaccine.

Studies are ongoing, but data collected so far indicate that a third, additional dose for these populations would be beneficial.

Helping and fostering the development of guidelines and recommendations for vaccinations and antibody testing, including for immunocompromised individuals, remains one of the Clinical and Translational Serology Task Force's (CTTF) major goals

and a continuing source of collaboration with the FDA and the Centers for Disease Control and Prevention. Planning for a trial of an additional vaccine dose in cancer patients and other immunocompromised people is underway.

Several studies have shown that two doses may not be enough in these groups. Cancer patients with solid tumors were previously shown to manifest low antibody responses after two doses of an mRNA vaccine. Those with blood cancers tend to have even lower levels, as do individuals receiving immunosuppressive therapies. People who underwent an organ transplant had some of the lowest antibody

responses across a comparison of cohorts from various studies.

Capping it off, some people had no significant antibody response at all.

Meanwhile, "there are promising emerging results suggesting that a third dose of the mRNA vaccines enhances antibody response in individuals that did not respond to the first vaccine series," said CTTF Co-chair Ligia Pinto, Ph.D., director of the Vaccine, Immunity, and Cancer Directorate at Frederick National Laboratory.

Several recent studies examined immune responses to a third dose in various cohorts of people who received an organ trans-

# Third Dose of Vaccine Authorized for Immunocompromised and Seniors; Studies Continue (cont.)

plant or who were receiving hemodialysis. Of those who remained seronegative after two doses, between 33% and 50% became seropositive after receiving the third.

A third dose in people aged 65 and older can be similarly important. That group is at the highest risk of developing cancer. A malignancy would further jeopardize their immune systems' ability to respond to SARS-CoV-2.

Antibody titers haven't been confirmed as an official correlate of protection against

SARS-CoV-2, but the scientific community recognizes antibodies' importance in defending against infection and the disease. Efforts to measure responses and elicit stronger ones across patient populations continue.

A booster trial in cancer patients who didn't generate detectable antibody levels after two doses of mRNA vaccine, involving a homologous and a heterologous third dose of vaccine, is under planning phases and discussion at the CTF.

**Editor's Note:** For data aggregating the studies on two doses, see the [July 22 presentation](#) by Sara Oliver, M.D., to the CDC Advisory Committee on Immunization Practices. For the four recent studies referenced above, see [Longlune et al.](#), *Neprol Dial Transplant*, May 2021; [Espí et al.](#), *medRxiv*, July 2021; [Kamar et al.](#), *N Engl J Med*, August 2021; and [Werbel et al.](#), *Ann Intern Med*, June 2021.

## Past Events



### Monthly Meetings

- Tues, 3.9.21** ***Clinical and Public Health Applications of SARS-CoV-2 Antibody Testing – Regulatory and Policy Perspectives***  
Dr. Ryan Karsner, Medical Officer, Division of Microbiology Devices, FDA, and  
Dr. Adi Gundlapalli, Chief Public Health Informatics Officer, CSELS, CDC
- Tues, 4.13.21** ***The Role of IDSA in Creating Guidelines for SARS-CoV-2 Serology***  
Dr. Mark Loeb, McMaster University
- Tues, 5.11.21** ***Overview of the COVID-19 Immunity Task Force Efforts in Canada***  
Dr. Timothy Evans, CITF Executive Director, McGill University  
***SARS-CoV-2 Serology and Correlates of Protection Studies at BARDA***  
Dr. Allison Totura, Division of Nonclinical Development, BARDA
- Tues, 6.8.21** ***COVID-19 Vaccination in Cancer Patients***  
Dr. Joshua Hill, Vaccine & Infectious Disease and Clinical Research Divisions, Fred Hutchinson Cancer Research Center  
***Safety and Immunogenicity of the COVID-19 Vaccine BNT162b2 for Patients with Cancer***  
Dr. Sheeba Irshad, CRUK Clinician Scientist & Honorary Medical Oncologist, King's College London
- Tues, 7.13.21** ***The UK COV-BOOST Trial***  
Dr. Saul Faust, Director, Southampton NIHR Wellcome Trust Clinical Research Facility, University of Southampton  
***The OCTAVE/OCTAVE DUO Trial***  
Dr. Carl Goodyear, Professor of Translational Immunology, University of Glasgow
- Tues, 8.10.21** ***COVID and Cancer: Future Preventive Strategies***  
Dr. Amit Verma, Associate Director, Translational Science, Albert Einstein Cancer Center  
***COVID-19 Vaccine and Patients with Cancer Participating in Oncology Clinical Trials***  
Dr. Vivek Subbiah, Executive Director, Medical Oncology Research, MD Anderson Cancer Network
- Tues, 9.14.21** ***Creation of a High-Throughput COVID Sequencing Pipeline***  
Dr. Lax Iyer and Dr. Stan Letovsky, Center of Excellence for Data Sciences, AI and Bioinformatics, Labcorp  
***The Status of SARS-CoV-2 Variant Reporting in Public Health Laboratories***  
Ms. Kelly Wroblewski, Director of Infectious Disease Programs, Association of Public Health Laboratories

## Past Events



### Focus Group Meetings

- Fri, 3.19.21** ***Do we have enough data-based evidence to develop two antibody-related guidelines (vaccinated/unvaccinated)?: Update to CDC Interim Guidelines for COVID-19 Antibody Testing***  
**Dr. Adi Gundlapalli**, Chief Public Health Informatics Officer, CSELS, CDC
- What is the Status of EUA for Quantitative Serology and Neutralization Assays?***  
**Dr. Ryan Karsner**, Medical Officer, Division of Microbiology Devices, FDA
- What are the Plans for Bridging Vaccine Efficacy with Serology?***  
**Dr. Ruben Donis**, Influenza and Emerging Infectious Diseases Division, BARDA
- Fri, 7.16.21** ***Regulatory Pathway for Serology Test Immunity and Protection Claims***  
**Dr. Timothy Stenzel**, Director of the Office of In Vitro Diagnostics and Radiological Health, FDA (CDRH)
- COVID-19 Vaccine Responses in Immunocompromised Patients: State of the Evidence and Future Directions***  
**Dr. Ghady Haidar**, Director of Research, Bone Marrow Transplant/Hematologic Malignancy ID, University of Pittsburgh School of Medicine
- Fri, 8.20.21** ***A Correlate of Protection for SARS-CoV-2***  
**Dr. Florian Krammer**, Professor, Vaccinology, Department of Microbiology, Icahn School of Medicine at Mount Sinai
- The Relationship between Neutralizing Antibodies and Protection from SARS-CoV-2 Infection***  
**Dr. Miles Davenport**, Theme Lead, Basic Science and Pathogenesis Team, and Program Head, Infection Analytics Program, Kirby Institute, University of New South Wales
- Fri, 9.17.21** ***Regeneron's Approach to Tackling COVID Now and in the Future***  
**Dr. George Yancopoulos**, Scientific Founder, President, and Chief Scientific Officer, Regeneron
- Anticoagulation in Patients Hospitalized with COVID-19: Evidence Review and Design of FREEDOM COVID Anticoagulation Trial***  
**Dr. Valentin Fuster**, Physician-in-Chief, The Mount Sinai Hospital and Director, Mount Sinai Heart



### Round Table

- Mon, 2.22.21** ***Topic: Serology Assays for Vaccine Trials, Selection of Antibody Treatments and Serosurveillance: Are we there yet?***
- Serology Science of Mount Sinai COVID-19 Platforms: Clinical Significance and Commercial Tests***  
**Dr. Florian Krammer and Dr. Erik Lium**, Icahn School of Medicine at Mount Sinai
- Clinical Utility of Commercially Available SARS-CoV-2 Serology Testing***  
**Dr. James Freeman**, Siemens
- Advanced Serology Testing for SARS-CoV-2 and Other Pathogens: Vaccine Development, Seroprevalence Surveys and Clinical Studies***  
**Dr. Jim Wilbur**, Meso Scale Discovery
- SARS-CoV-2 Antibody Testing in a Large Commercial Lab: Where are we and where are we going?***  
**Dr. Nigel Clarke**, Quest Diagnostics
- Mon, 4.26.21** ***Topic: Impact of Viral Variants and Integration of Sequencing Efforts with Serology Data***
- SARS-CoV-2 Genomics at NIAID***  
**Dr. Liliana Brown**, Director, Office of Genomics and Advanced Technologies, NIAID
- Standards and Translational Science for SARS-CoV-2 Measurements***  
**Dr. Marc Salit**, Director, Joint Initiative for Metrology in Biology, SLAC National Accelerator Laboratory, Stanford University
- Mon, 6.28.21** ***Topic: Vaccination in Cancer Patients and Immunocompromised Individuals***
- Variable Responses to COVID-19 Vaccination in Myeloma***  
**Dr. Samir Parekh**, Hematology-Oncology and Oncological Sciences, Mount Sinai
- Immunogenicity of COVID-19 mRNA Vaccines in Immunosuppressed Patients with Autoimmune Disease***  
**Dr. Alfred Kim**, Director, Washington University Lupus Clinic, Washington University School of Medicine



## Past Events

### Round Table (cont.)

#### **SARS-CoV-2 Vaccine Safety and Immunogenicity in Solid Organ Transplant Recipients**

Dr. Andrew Karaba, Transplant/Oncology Infectious Diseases, JHU School of Medicine

Mon, 8.23.21 **Topic: Protection against New Variants by COVID-19 Vaccines: Where are we now and where do we need to go?**

#### **VACCINES WORK: A Newcastle Disease Virus-Vectored SARS-CoV-2 Spike Vaccine**

Dr. Peter Palese, Horace W. Goldsmith Professor and Chair, Department of Microbiology, Icahn School of Medicine at Mount Sinai

#### **Update on Effectiveness of BNT162b2 against SARS-CoV-2 Variants**

Dr. Kena Swanson, Senior Director, Viral Vaccines, Pfizer

#### **mRNA-1273 Effectiveness against Variants**

Dr. Randall Hyer, SVP, Global Medical Affairs, Moderna

## Upcoming Events



**Monthly Meeting:** Tuesday, October 12, 2021

**Focus Group Meeting:** Friday, October 15, 2021

**Round Table:** Monday, October 25, 2021

## Leadership Corner



#### **Ligia Pinto, Ph.D.**

Director, Vaccine, Immunity, and Cancer Directorate  
Frederick National Laboratory for Cancer Research



#### **Jim Cherry, Ph.D.**

Associate Director, Research Technologies, DIR, NIAID  
Scientific Program Director, CSSI, OD, NCI  
Contracting Officer Representative, CSSI, OD, NCI



#### **Carlos Cordon-Cardo, M.D., Ph.D.**

Professor and Chairman for the Mount Sinai  
Health System Department of Pathology



#### **Doug Lowy, M.D.**

Principal Deputy Director  
National Cancer Institute

It's with great excitement that we share our first Clinical and Translational Serology Newsletter with you. This newsletter will be published every three to four months and is intended to summarize key priorities, perspectives, and events of a very engaged and enthusiastic team of scientists, clinicians, public health specialists, regulators, and policymakers collaborating on diverse COVID-19 response efforts to fight the spread of the virus. We hope our collaborative work will fully leverage the power of serology, new scientific findings,

and technical tools to benefit public health and ensure a better and healthier world.

We welcome your suggestions, comments, and requests, and we're looking forward to working with and hearing from all of you.

**Ligia, Jim, Carlos, and Doug**

## To learn more, give feedback, and participate, please contact:

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